

Chicago Regional Greenhouse Gas Emissions Inventory

Work Plan and Methodology

November 2,
2017



Prepared for CMAP's
Environmental and Natural
Resources Working
Committee

Presented by Emily Golla and
Rich Walter, ICF

Introductions



Rich Walter
Principal in Charge

- 25 years of experience
- Located in San Francisco
- Team lead for the preparation of the Chicago 2010 Metropolitan Regional GHG Inventory, GHG inventories for 88 cities in Los Angeles County, and the regional GHG reduction plan for 21 cities in San Bernardino County, among numerous other GHG inventories and climate action plans.



Emily Golla
Project Manager

- 9 years of experience
- Located in DC
- Currently leading a team in the development of a GHG inventory for the State of Hawaii, and has supported the Environmental Protection Agency (EPA), National Parks Service, and the UK Department of Energy and Climate Change in the preparation of GHG inventories.

Agenda

- **Project Overview**
- **Project Approach**
 - Define the Project Approach and Methodology and Collect Data
 - Calculate and Analyze Regional Emissions
 - Develop and Finalize Report
- **Project Schedule**
- **Inventory Methods**
- **Questions and Answers**



Project Overview

- **Purpose**

- Develop a greenhouse gas (GHG) emissions inventory for 2015
- Update the region's 2010 inventory
- Analyze results and trends
- Develop emission projections

- **Scope**

- Cover the seven counties of Cook (including the City of Chicago), DuPage, Kane, Kendall, Lake, McHenry, and Will
- Comply with the Global Protocol for Community-Scale Greenhouse Gas Emission Inventories (GPC) BASIC level requirements





Project Approach: Define the Project Approach and Methodology and Collect Data

- **Task 1.1: Define project work plan and inventory methodology**
 - Identify scope of the assignment, our approach and proposed methodology, anticipated data needs, and the project schedule
- **Task 1.2: Present work plan and inventory methodology**
 - Present to CMAP's Environment and Natural Resources working committee
 - Today!
- **Task 1.3: Obtain inventory data**
 - Document in a data collection template to facilitate data collection and tracking
 - Identify data sources, establish responsibilities, and conduct outreach

Project Approach: Calculate and Analyze Regional Emissions

- **Task 2.1: Calculate, analyze, and produce the 2015 emissions inventory and 2010 inventory update**
 - Results will be presented in aggregate, by sector, by county (and separately for the City of Chicago), and on a per capita basis
 - Compare 2010 and 2015 emissions by sector, sub-sector, scope, and geography
 - Analyze trend results relative to population, households, employment, GDP, and heating and cooling days
 - Forecast emissions for 2020, 2025, 2030, 2035, 2040, 2045, and 2050
- **Task 2.2: Propose potential ON TO 2050 emissions targets**
 - Identify at least three options for emissions targets for 2020, 2035, and 2050
 - Target options identified relative to scientific imperative for reduction and rough assessment of feasibility

Project Approach: Develop and Finalize Report

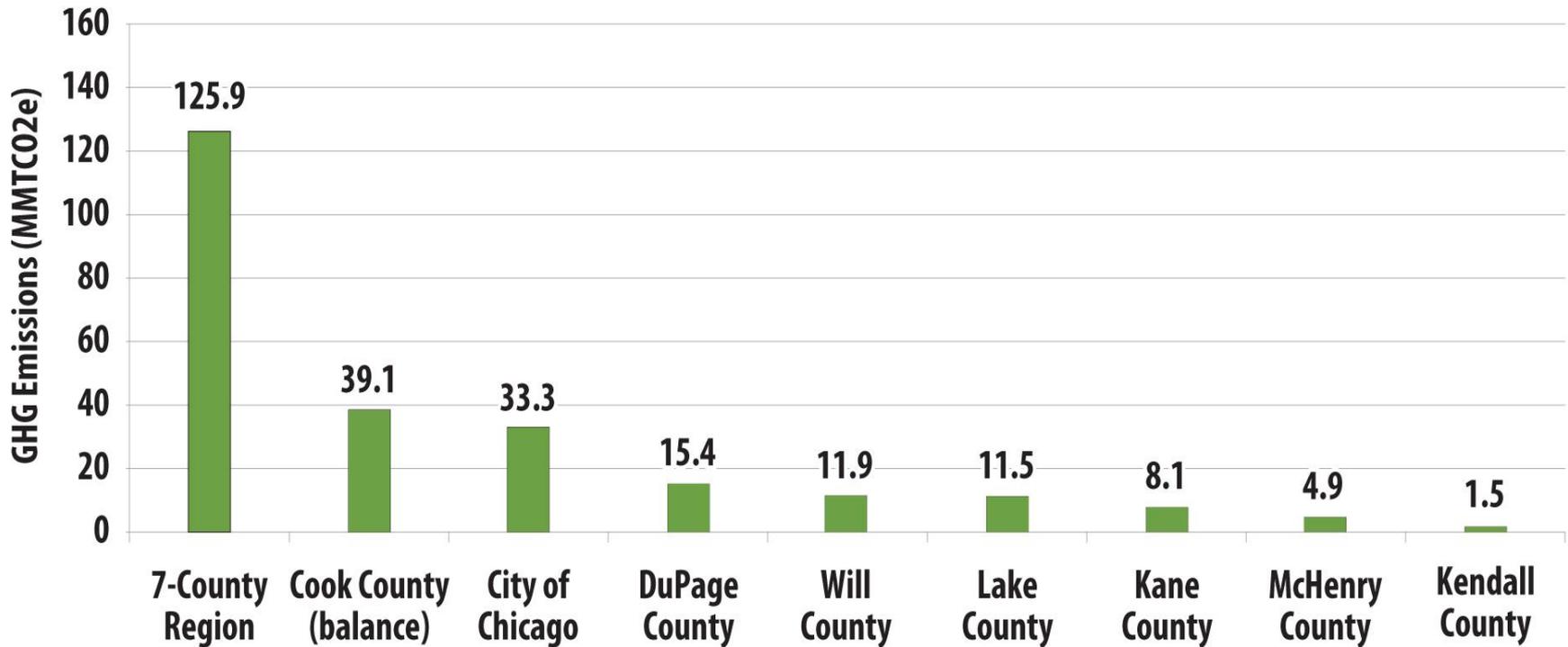
- **Task 3.1: Prepare draft report**
 - Develop creative brief, develop report template, and draft content
- **Task 3.2: Present draft report**
 - Present to CMAP's Environment and Natural Resources working committee
- **Task 3.3: Finalize and submit the report and other deliverables**
 - Revise and finalize based on feedback



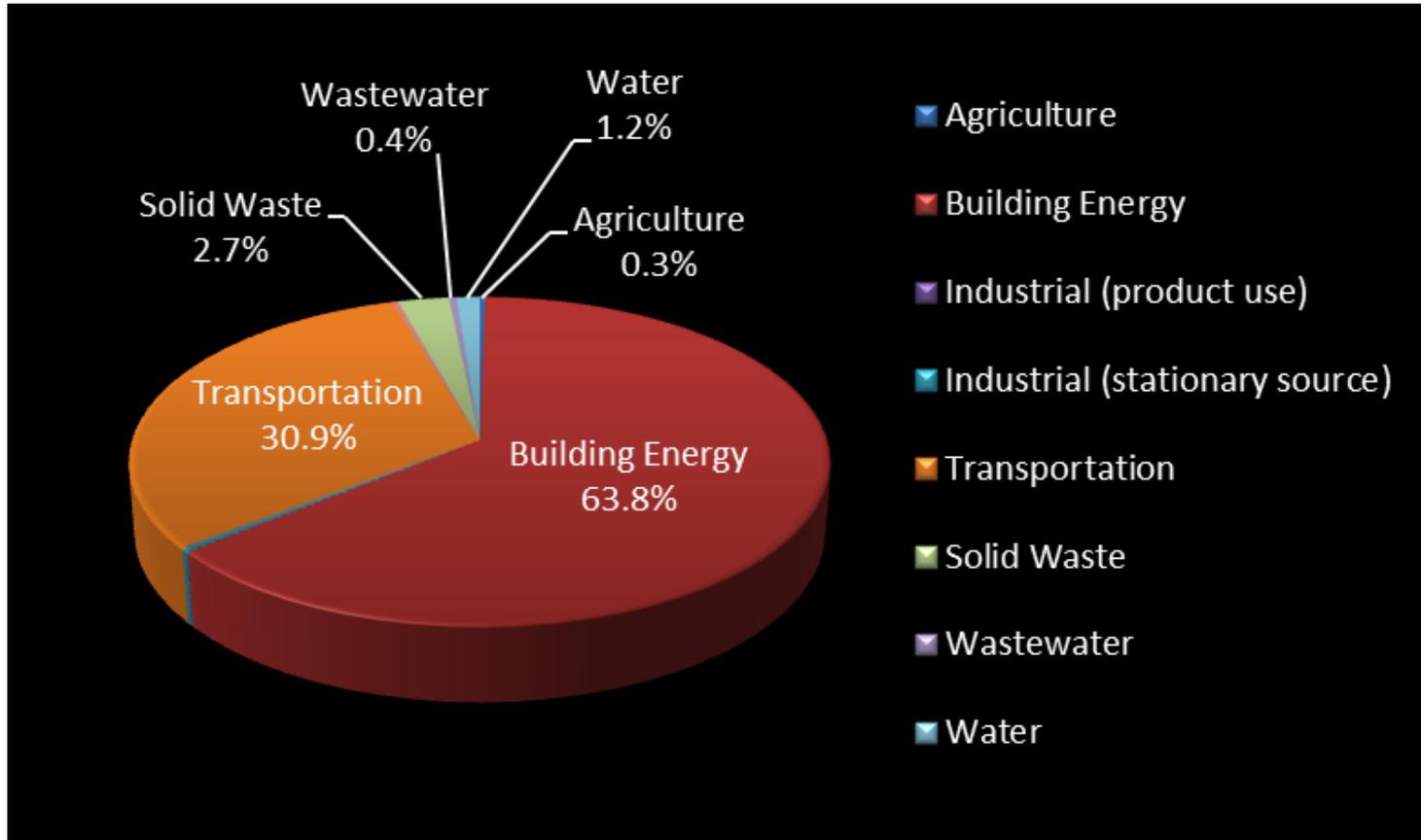
Project Schedule

| Task | Deliverable/Milestone | Deadline |
|------|--|------------------|
| 1.1 | Draft work plan and inventory methodology | October 26, 2017 |
| 1.2 | Present draft work plan and inventory methodology | November 2, 2017 |
| 1.3 | Final work plan and inventory methodology | December 1, 2017 |
| 2.1 | 2015 GHG emissions inventory and 2010 inventory update | February 1, 2018 |
| 2.2 | Proposed ON TO 2050 emissions targets | February 1, 2018 |
| 3.1 | Draft regional GHG emissions inventory report | March 19, 2018 |
| 3.2 | Present draft regional GHG emissions inventory report | April 2018 |
| 3.3 | Final regional GHG emissions inventory report | April 23, 2018 |

2010 Regional Inventory Overview



2010 Regional Inventory Overview



GPC BASIC Level Requirements*

- **Stationary Energy:** Emissions from the combustion of fuel in residential, commercial and institutional buildings and facilities and manufacturing industries and construction, as well as power plants to generate grid-supplied energy. Also includes fugitive emissions that occur during the extraction, transformation, and transportation of primary fossil fuels.
- **Transportation:** Emissions produced directly by the combustion of fuel or indirectly by the use of grid-supplied electricity to support journeys by road, rail, water, and air.
- **Waste:** Emissions produced during the disposal and treatment of waste through aerobic or anaerobic decomposition or incineration.

** Emissions from industrial processes and product use (IPPU) as well as agriculture, forestry, and other land use (AFOLU) are not included.*

Inventory Methods

| Sector/Sub-Sector | Proposed Methodology |
|---|--|
| Stationary Energy | |
| Residential Buildings | Based primarily on electricity and natural gas data as provided by the utilities that serve the Chicago Region as well as consumption and/or emissions data on other fuel types. |
| Commercial and Institutional Buildings and Facilities | |
| Manufacturing Industries and Construction | |
| Energy Industries | Based on emissions data from energy generation units that report under EPA's GHGRP. |
| Agriculture, Forestry, and Fishing Activities | No stationary energy emission sources are anticipated to be included due to lack of sources and lack of available data. |
| Non-Specified Sources | No stationary energy emission sources are anticipated. |
| Fugitive Emissions from Mining, Processing, Storage, and Transportation of Coal | No emission sources are anticipated to be included due to no mining within inventory boundary and due to lack of data regarding coal transport times and duration within inventory boundary. |
| Fugitive Emissions from Oil and Natural Gas Systems | Based on emissions data reported under EPA's GHGRP. |

Inventory Methods

| Sector/Sub-Sector | Proposed Methodology |
|--|---|
| Transportation | |
| On-Road | Based on VMT data by transportation mode and vehicle type from the EPA MOVES2014a model. |
| Railways | Based on regional rail activity data for passenger and freight rail. |
| Waterborne Navigation | Based on recreational boat activity from the NONROAD component of the MOVES2014a model and commercial data from water-based transportation service providers. |
| Aviation | Based on fuel consumption data from regional helicopter service providers for trips that depart and land within the region. |
| Off-Road | Based on activity data from the NONROAD component of the MOVES2014a model. |
| Waste | |
| Disposal of Solid Waste | Calculated using the methane commitment method. |
| Biological Treatment of Waste | Based on the estimated quantity of waste composted. |
| Incineration and Open Burning of Waste | Based on the occurrence and availability of data on municipal incineration and medical incineration. |
| Wastewater | Based on fugitive emissions and energy use rates reported for Metropolitan Water Reclamation District (MWRD) treatment plants. |

Questions and Answers

